

**REMARKS**

**Claim Rejections Under §103:**

Paragraph 4a of the Action rejects claims 1-7 under 35 U.S.C. §103(a) as being obvious in view of Cygan (U.S. Patent 5,564,086) in further view of Medendorp (U.S. Patent 4,122,400). Applicants respectfully traverse the rejection because Cygan and Medendorp, alone or in combination, fail to make out a *prima facie* case of obviousness.

In rejecting claims 1-7, the Action primarily relies on Cygan. The Action admits, however, that Cygan fails to teach all of the elements of claims 1-7. Accordingly, Cygan cannot render claims 1-7 unpatentable, because as the Action admits, Cygan fails to teach, suggest, or disclose each and every element of claims 1-7. The Action must, therefore, rely on Medendorp to make up for the deficiencies of Cygan, which it does not.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Finally, there must be a reasonable expectation of success. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (See MPEP §706.02(j)).

First, even if the two references were to be combined, they would at best suggest using a feedback network to control an amplifier and using a processor to control a variable matching network. Cygan does not teach “a processor configured to read the measured power of the transmit signal and the measured power of the reflected signal and generate a first control signal configured to control a matching network and a second control signal configured to control an amplifier, wherein both the first and second control signals are based on the measured power of the transmit signal and the measured power of the reflected signal” as specified in claim 1.

Certain embodiments of the invention disclosed in the present application are directed to systems and methods for controlling output power in a communication device, including controlling both a matching circuit and an amplifier output power based on the detected transmit and reflected power. By controlling both the matching circuit and amplifier power, as taught in the present application, a communication device can better adapt to changing conditions that can cause power to be reflected back from the antenna. (See Summary pg. 12)

Accordingly, claim 1 recites a mismatch detector comprising, *inter alia*, a processor configured to read the measured power of the transmit signal and the measured power of the reflected signal and generate a first control signal configured to control a matching network and a second control signal configured to control an amplifier, wherein both the first and second control signals are based on the measured power of the transmit signal and the measured power of the reflected signal.

Cygan and Medendorp, taken individually or in combination, fail to teach or suggest such subject matter.

While Cygan, concerns a processor 110 that can control a variable matching network 111 (See col. 4, Ins. 42-46), nothing in Cygan teaches or suggests controlling the matching network and the power amplifier based on transmitted and reflected power, as recited in claim 1. Indeed, the Office Action recognizes this shortcoming in Cygan and attempts to rely on Medendorp to overcome this deficiency. Specifically, the Office Action states that Medendorp discloses “a processor device...adapted for generating a feedback signal...based on the sensed/measured transmitting and reflecting power generated by the directional device.” Medendorp, however, does not teach a processor. Medendorp disclosed controlling an amplifier using a feedback loop, not a processor.

Processors include, for example, DSPs, microcontroller, or microprocessor, etc. (See paragraph [55]). As figure 1 of Medendorp shows, the feedback loop is an analog circuit that includes resistors, capacitors, transistors, operational amplifiers, etc. The feedback loop is an analog circuit that generates an analog feedback signal. A processor, such as a DSP, microcontroller, or microprocessor *executes instructions*, and through the execution of these instructions controls the amplifier (and the variable matching network) as claimed in claim 1. The use of a processor allows for greater flexibility in the operation of the device. For example, instructions can vary operation for many different conditions and code can generally be updated and changed. While updating and changing a feed back loop is limited to changing the value of the components, for example, the resistors and capacitors. The feedback loop does not offer the same flexibility as a processor. A feedback loop is not a processor, rather it is an analog circuit.

Accordingly, even when combined the two references do not teach each and every element of the invention claimed in claim 1.

Second, with respect to claim 1, the Action does not provide the substantial evidence based on the references themselves, necessary to support a *prima facie* case of obviousness. As noted above, “[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).” See MPEP §706.02(j). Further, each finding of fact upon which a conclusion of obviousness is based must be supported by substantial evidence and, in particular, the conclusion that the prior art suggests or motivates the modification of a prior art reference must be based on findings supported by substantial evidence. *In re Kotzab*, 217 F. 3d 1365, 1370-71 (Fed. Cir. 2000). Hence, a *prima facie* case of obviousness cannot be made by merely asserting that modifications to the prior art are “well within the ordinary skill of the art.” *Ex Parte Leavengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

The Action states that Cygan teaches controlling a matching network using a processor and Mendendorp teaches controlling an amplifier using a feedback network. Nothing in either reference, however, teaches combining the two references together to create the invention claimed in the present application. The Action attempts to provide this motivation by stating that “it would have been obvious...to modify the processor device...for controlling both the matching network...and the power amplifier...in order to protect the amplifier.” As stated above, a *prima facie* case of obviousness cannot be made by merely asserting that modifications to the prior art are “well within the ordinary

skill of the art.” *Ex Parte Leavengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). In other words, a *prima facie* case of obviousness can not be made by merely asserting that “it would have been obvious.”

Accordingly, Applicant asserts that the Action fails to make out a *prima facie* case of obviousness, because it fails to provide the substantial evidence in support of the conclusion that *the cited references* teach a motivation to modify the teachings of Cygan with the teachings of Medendorp. Stated another way, the statement “it would have been obvious...to modify the processor device...for controlling both the matching network...and the power amplifier...in order to protect the amplifier” is not based on the references being cited and appears at best to be based on hindsight gleaned from the teachings of the present application.

Finally, the Action makes no attempt to provide a likelihood of success and, therefore, combining the two references was improper on that basis alone. In short, Cygan and Mendendorp, alone or in combination, fail to meet one requirement for a *prima facie* case of obviousness with respect to claim 1, much less all three. Applicant therefore respectfully requests that the rejection as to claim 1 be withdrawn. Claims 2-7, ultimately depend from claim 1 and are allowable for at least the reasons discussed above with respect to claim 1.

Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 1. Applicant, also respectfully request withdrawal of the rejection as to claims 2-7 because they depend from claim 1, which is itself allowable over the art of record.

Paragraph 4b of the Action rejects claims 8-16 under 35 U.S.C. §103(a) as being obvious in view of Sroka (U.S. Patent 5,778,308) in further view of Medendorp. Applicants respectfully traverse the rejection because Sroka and Medendorp, alone or in combination, fail to make out a *prima facie* case of obviousness.

In rejecting claims 8-16, the Action primarily relies on Sroka. The Action admits, however, that Sroka fails to teach all of the elements of claims 8-16. Accordingly, Sroka cannot render claims 8-16 unpatentable, because as the Action admits, Sroka fails to teach, suggest, or disclose each and every element of claims 8-16. The Action must, therefore, rely on Medendorp to make up for the deficiencies of Sroka, which it does not.

As with claims 1-7 above, the rejection of claims 8-16 fails to make out a *prima facie* case of obviousness. First, even if the two references were to be combined, they would at best suggest using a feedback network to control an amplifier and using a processor to control a matching network. Sroka does not teach “a processor configured to read the measured power of the transmit signal and the measured power of the reflected signal and generate a first control signal configured to control a matching network and a second control signal configured to control an amplifier, wherein both the first and second control signals are based on the measured power of the transmit signal and the measured power of the reflected signal” as taught in claim 8.

Certain embodiments of the invention disclosed in the present application are directed to systems and methods for controlling output power in a communication device, including controlling both a matching circuit and an amplifier output power based

on the detected transmit and reflected power. By controlling both the matching circuit and amplifier power, as taught in the present application, a communication device can better adapt to changing conditions that can cause power to be reflected back from the antenna. (See Summary pg. 12)

Accordingly, claim 8 recites a mismatch detector comprising, *inter alia*, a processor configured to read the measured power of the transmit signal and the measured power of the reflected signal and generate a first control signal configured to control a matching network and a second control signal configured to control an amplifier, wherein both the first and second control signals are based on the measured power of the transmit signal and the measured power of the reflected signal.

Sroka and Medendorp, taken individually or in combination, fail to teach or suggest such subject matter.

While Sroka, concerns a processor 32 that can control a matching network 31 (See col. 4, Ins. 28-29), nothing in Sroka teaches or suggests controlling the matching network and the power amplifier based on transmitted and reflected power, as recited in claim 8. Indeed, the Office Action recognizes this shortcoming in Sroka and attempts to rely on Medendorp to overcome this deficiency. Specifically, the Office Action states that Medendorp discloses “a processor means...adapted for generating a feedback signal...based on the sensed/measured transmitting and reflecting power generated by the directional device.” Medendorp, however, does not teach a processor. Medendorp disclosed controlling an amplifier using a feedback loop, not a processor.

As noted above, processors include, for example, DSPs, microcontroller, or microprocessor, etc. (See paragraph [55]). As figure 1 of Medendorp shows, the

feedback loop is an analog circuit that includes resistors, capacitors, transistors, operational amplifiers, etc. The feedback loop is an analog circuit that generates an analog feedback signal. A processor, such as a DSP, microcontroller, or microprocessor *executes instructions*, and through the execution of these instructions controls the amplifier (and the variable matching network) as claimed in claim 8. The use of a processor allows for greater flexibility in the operation of the device. For example, instructions can vary operation for many different conditions and code can generally be updated and changed. While updating and changing a feed back loop is limited to changing the value of the components, for example, the resistors and capacitors. The feedback loop does not offer the same flexibility as a processor. A feedback loop is not a processor, rather it is an analog circuit.

Accordingly, even when combined the two references do not teach each and every element of the invention claimed in claim 8.

Second, with respect to claim 8, the Action does not provide the substantial evidence based on the references themselves, necessary to support a *prima facie* case of obviousness. The Action states that Sroka teaches controlling a matching network using a processor and Mendendorp teaches controlling an amplifier using a feedback network. Nothing in either reference, however, teaches combining the two references together to create the invention claimed in the present application. The Action attempts to provide this motivation by stating that “it would have been obvious...to modify the processor...for controlling both the matching network...and amplifier...in order to protect the amplifier.” As stated above, a *prima facie* case of obviousness cannot be made by merely asserting that modifications to the prior art are “well within the ordinary skill of



the art.” *Ex Parte Leavengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). In other words, a *prima facie* case of obviousness can not be made by merely asserting that “it would have been obvious.”

Accordingly, Applicant asserts that the Action fails to make out a *prima facie* case of obviousness, because it fails to provide the substantial evidence in support of the conclusion that *the cited references* teach a motivation to modify the teachings of Stroka with the teachings of Medendorp. Stated another way, the statement “it would have been obvious...to modify the processor device...for controlling both the matching network...and the power amplifier...in order to protect the amplifier” is not based on the references being cited and appears at best to be based on hindsight gleaned from the teachings of the present application.

Finally, the Action makes no attempt to provide a likelihood of success and, therefore, combining the two references was improper on that basis alone. In short, Sroka and Mendendorp, alone or in combination fail to meet even one requirement for a *prima facie* case of obviousness with respect to claim 8, much less all three. Applicant therefore respectfully requests that the rejection as to claim 8 be withdrawn. Claims 9-13, ultimately depend from claim 8 and are allowable for at least the reasons discussed above with respect to claim 8. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 8. Applicant, also respectfully request withdrawal of the rejection as to claims 9-13 because they depend from claim 8, which is itself allowable over the art of record.

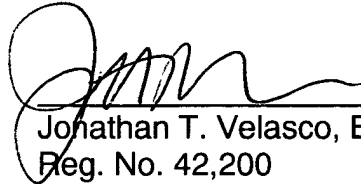
Claim 14 is allowable for at least the same reasons discussed above with respect to claim 8. As discussed above, Stroka in combination with Mendendrop fail to establish a *prima facie* case of obviousness because, as discussed above, the three basic criteria for a *prima facie* case are not met. First, the prior art reference (or references when combined) do not teach or suggest all the claim limitations, as discussed with respect to claim 8. Second, as discussed above with respect to claim 8, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Finally, as discussed above with respect to claim 8, there is no reasonable expectation of success and, therefore, combining the two references was improper on that basis alone. Applicant therefore respectfully requests that the rejection as to claim 14 be withdrawn. Claims 15-16, ultimately depend from claim 14 and are allowable for at least the reasons discussed above with respect to claim 14. Accordingly, Applicant respectfully requests withdrawal of the rejection as to claim 14. Applicant, also respectfully request withdrawal of the rejection as to claims 15-16 because they depend from claim 14, which is itself allowable over the art of record

**CONCLUSION**

For all the foregoing reasons, allowance of claims 1-16 pending in the present application is respectfully requested.

Respectfully Submitted,

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